

CLAIMS

1. A process for the continuous preparation of compositions comprising silica, by melting in a furnace comprising at least two tanks in series, said tanks each comprising at least one burner submerged in the melt, silica and fluxing agent for the silica being introduced into the first tank.
2. The process as claimed in the preceding claim, characterized in that at least 90% of the silica and at least 90% of the fluxing agent for the silica are introduced into the first tank.
3. The process as claimed in the preceding claim, characterized in that the furnace is fed with a thinner, at least 90% of which is introduced into the second tank of the furnace.
4. The process as claimed in one of the preceding claims, characterized in that the first tank is heated to a higher temperature than the other tank or tanks of the furnace.
5. The process as claimed in the preceding claim, characterized in that the temperature difference between the first tank and the other tank or tanks is at least 80°C.
6. The process as claimed in the preceding claim, characterized in that the first tank is heated to a temperature ranging from 1230 to 1350° and in that the other tank or tanks are heated to a temperature of at most 1150°C.
7. The process as claimed in one of the preceding claims, characterized in that the final composition comprises 10 to 70% SiO₂ by weight, 0.3 to 30% Na₂O by weight, 5 to 30% B₂O₃ by weight and 0.3 to 35% by weight

of at least one oxide of a metal other than Si, Na and B.

5 8. The process as claimed in the preceding claim, characterized in that the final composition is a frit comprising 40 to 70% SiO_2 by weight, 20 to 30% Na_2O by weight, 5 to 15% B_2O_3 by weight and 3 to 20% by weight of at least one oxide of a metal other than Si, Na and B.

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9. The process as claimed in either of the preceding claims, characterized in that the metal is chosen from chromium, cobalt, copper, nickel, selenium, zirconium, titanium, manganese, praseodymium, iron and zinc.

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10. The process as claimed in one of the preceding claims, characterized in that at least one oxide of a metal is introduced into the second tank of the furnace.

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11. The process as claimed in the preceding claim, characterized in that the furnace comprises at least three tanks in series, the second being heated to a temperature ranging from 1000° to 1150°C and the third to a temperature ranging from 900° to 1000°C .

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12. The process as claimed in the preceding claim, characterized in that the oxide has several oxidation states and in that the submerged burner(s) of the third tank has/have a sufficiently oxidizing flame for the oxidation state of the oxide to be raised on going from the second to the third tank.

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13. The process as claimed in one of the preceding claims, characterized in that the composition is a color frit or a tile frit or an enamel.

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14. A tile frit obtained by the process of one of the preceding claims.

15. A furnace for the continuous melting of a composition comprising silica, said furnace comprising at least two tanks in series, said tanks each
5 comprising at least one burner submerged in the melt.

16. The furnace as claimed in the preceding claim, characterized in that it comprises at least three tanks in series.
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17. The furnace as claimed in one of the preceding furnace claims, characterized in that two of the tanks each comprise separate charging means.

15 18. A plant for the preparation of glass compositions, comprising a furnace of one of the preceding furnace claims, followed by a feeder or a fining zone.